

Gamification as a Strategy to Teach Secondary Level of Students- A Study

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Abstract

The present techno-based century demands the use of technology in different fields of work, even in the sector of education, the use of technology in the teaching-learning process is inevitable. The use and application of different techno-based tools make the teaching-learning process more interesting and effective. For a better teaching-learning process, the teachers may use different types of techno-based tools and techniques as per the need and demand of the course content. The present Techno-savvy students often waste so much time on gadgets like mobiles, tablets, and laptops. However, if they can get learning materials, videos etc., through the application of those gadgets, they will enjoy and learn it easily. Gamification in education has emerged as a widely recognized approach to boosting student engagement and motivation. Gamification means integrating games in teaching to make learning more engaging, fun, and motivating for students. Gamification not only gives the students fun and motivation but also helps them to think independently and create new things with joy and happiness.

Hence, the investigator tried to study the different gamification tools that may be used for secondary school students, exploring the efficiency of teachers and students regarding implementation and use of gamification, challenges, and best practices for seamless integration into learning environments. Both primary and secondary data were used for the study. The descriptive survey was used for collecting data. The findings of the study are expected to provide valuable insights to parents, educators, and policymakers on effectively integrating gamification to enhance young learners' educational experiences. It also examines the challenges of designing

gamified learning experiences while highlighting their benefits, such as boosting 21st-century skills and academic performance.

Keywords: Gamification, Education, Student Engagement, Motivation, Secondary School Student, Educational Technology

Introduction

Playfulness is one of the basic characteristics of every human being, especially school students. The students of the secondary level in their adolescent period become more creative, and energetic and, like to feel and do work independently. They always like to participate in different activities more actively that provide them the space for fun, engagement and motivation. Due to the lack of fun, motivation and brainstorming activities in traditional classroom the students become bore and find it difficult to learn even more easy content. To make the teaching learning process easy, interesting and motivating, the teachers can use and apply techno-based strategy. The present students also have techno-savvy features. They always like to use different technological applications. Hence, if the teacher uses techno-based gamification techniques to teach the different course contents to the students then the students will

be more motivated, engaged and get fun. Gamification means integrating the games in teaching which makes the contents of the study for the children more interesting, fun, and motivating. Gamification not only gives the students fun and motivation but also helps them to think independently and create new with joy and happiness. As the secondary level of education is called the foundation of all education, hence every teacher must teach the student with utmost care. Creative skills, language skills, painting skills, problem-solving skills, scientific skills, digital knowledge, quizzing skills etc. can be developed at the secondary level by applying different gamification techniques like Duolingo, Kahoot, Scratch Junior, Quizlet, and Cosmic gamification, etc. It can foster competitive attitude of the learners also.

‘Gamification, a pedagogical approach that integrates game elements such as points, leaderboards, badges, and challenges into learning activities, has emerged as a

promising strategy to enhance student participation and achievement.’(Gupta, 2024)

Though there are many advantages of gamification but effective implementation of gamification comes with challenges. Educators must find a balance between extrinsic and intrinsic motivation, promote inclusivity, and design gamified activities that align with educational goals

Review of Related Literature:

Ahmad &Khan (2024) reported that implementing gamification has positive impact on increasing students' learning interest and performance of the experimental group as compared to the control group. From their study it was found that gamification improves the learning environment and also help in enhancing students' comprehension and overall performance in class.

Ambikapathy et al. (2023) collected data from 200 students and found that gamification enhances motivation in class and establishes a significant positive relationship between engagement and learning outcomes

Gupta (2024) demonstrated that gamification positively influences student engagement and learning outcomes by fostering motivation, encouraging active participation, and enhancing knowledge retention. The findings indicate that incorporating gamification into educational curricula can effectively complement and enhance traditional teaching methods.

Hong and Masood (2014) found that the gamification is versatile approach that can be applied to various learning content to boost motivation intrinsically and, to some extent, promoting student engagement in the classroom.

Yildirim (2017), through an experimental study, found that gamification-based teaching practices have a positive impact on academic achievement and attitudes of students towards lessons.

Kaur (2024) highlights that Sri Aurobindo's educational philosophy emphasizes making the learning process an enjoyable, soul-awakening experience, a principle that aligns with the core objective of gamification to transform secondary education into an engaging and "fun" discovery-based journey. From the above studies done by different investigators, it is found that gamification

helps in motivating and engaging students in the classroom and has a significant positive relation with academic achievement.

Objectives of the Study:

The present study has the following objectives:

1. To study gamification as a strategy of the teaching-learning process.
2. To know about the efficiency of teachers regarding the implementation of gamification according to gender at the secondary level.
3. To know about the efficiency of students in using gamification according to gender at the secondary level.
4. To know the challenges of implementing gamification.

Hypotheses:

1. There is no difference in the efficiency of teachers regarding the implementation of gamification according to gender at the secondary level.
2. There is no difference in the efficiency of students in using gamification according to gender at the secondary level.

Methodology of the Study:

Method: The descriptive field survey method was applied for this study.

Sample and sampling technique: A total 100 numbers of teachers (50 male and 50 female) from 10 numbers of secondary schools located in Golaghat district were selected as samples for the study. Again, 100 numbers of students (50 males and 50 females) from class IX were selected from the same 10 numbers of schools. The simple random sampling techniques were applied for selecting the sample.

Tools and statistical techniques applied:

The self-structured questionnaire was applied for collecting data from the selected sample for the study. The mean, standard deviation and z test were used for analyzing the data.

Delimitation of the Study: Some delimitations of the study are there, they are-

1. Due to time constrain, only 100 numbers of teachers were taken as a sample for the study, out of which 50 were male and 50 female teachers.
2. Only 100 numbers of students out of which 50 male and 50 female students from secondary schools of Golaghat district were taken as a sample for the study.

3. The students of class IX were selected as the sample for this study.

Analysis and Interpretation of Data

Objective 1: To study gamification as a strategy of the teaching-learning process.

Gamification as a teaching strategy involves integrating game-like points, rewards, challenges, and leaderboards etc. into the learning process to increase student motivation and engagement. These elements create a fun and interactive environment where students are encouraged to participate actively and stay interested. Gamification gives students a sense of achievement and competition and helps them to enhance problem-solving skills, teamwork, ability of critical thinking. Research indicates that applying gamification in the classroom can improve learning outcomes, increase motivation, and build a positive attitude toward learning. It also makes difficult concepts easier to understand and remember. Overall, gamification is a useful way to enhance traditional teaching methods and create a more enjoyable and student-focused learning experience.

Below is an overview of some of the most popular gamification tools used to enhance learning experiences by the teachers:

- Kahoot! Kahoot! is a platform where quizzes are transformed into interactive games to making learning more enjoyable.
 - Duolingo: Duolingo is a language-learning app which helps to learn and practice different languages through game like-lessons
 - Classcraft: Classcraft is a unique tool that turns learning into a role-playing adventure. It keeps students engaged by allowing them to choose different character roles and earn rewards for positive behavior, completing tasks, and collaborating with their peers. This approach not only makes learning fun but also encourages teamwork and responsibility.
 - Quizizz: Quizizz is quite similar to Kahoot! in where teacher allows create quizzes and games for students and students to complete quizzes at their own pace.
- Scratch Junior: Scratch Junior is a beginner-friendly coding platform created for young children to design their own interactive stories, animations, and games. It uses a simple, visual interface where kids can connect blocks of code to make characters

move, jump, speak, and perform other actions.

➤ **Cosmic gamification:** Cosmic gamification is a more advanced approach to gamification that incorporates large-scale, immersive game elements often inspired by themes from space or the universe. It combines virtual and real-world experiences to engage users across different platforms,

promoting collaboration, exploration, and problem-solving on a global scale etc.

Objective 2: To know about the efficiency of teachers regarding the implementation of gamification according to gender at the secondary level.

Hypothesis 1: There is no difference in the efficiency of teachers regarding the implementation of gamification according to gender at the secondary level.

Table 1

Mean, Standard Deviation, and z-value of the teacher's efficiency regarding the implementation of gamification according to gender at the secondary level

District	Gender	Mean	Standard Deviation	Z value	Significance Level
Golaghat	Male	16.38	9.69	1.65	Insignificant at 5% level
	Female	13.4	8.37		

It is observed from Table -1 that the average level of efficiency of male teachers regarding the implementation of gamification is 16.38 and 13.4 for female teachers. Hence, the efficiency of implementation of gamification by male teachers is higher than that of female teachers. The standard deviation of male teachers is 9.69 and female teachers is 8.37. The z-value of 1.65 is found insignificant at 5% level of significance.

Therefore, it may be concluded that there is no significant difference between the male and female teachers regarding the efficiency of implementation of gamification at the secondary level in Golaghat district, Assam.

Objective 3: To know about the efficiency of students in using gamification according to gender at the secondary level.

Hypothesis 2: There is no difference in the efficiency of students in using gamification according to gender at the secondary level.

Table 2

Mean, Standard Deviation, and z-value of the efficiency of students in using gamification according to gender at the secondary level.

District	Gender	Mean	Standard Deviation	Z value	Significance Level
Golaghat	Male	15.16	8.24	0.63	Insignificant at 5% level
	Female	16.16	7.62		

From the above-mentioned Table 2, it is found that the average level of efficiency of male and female students regarding the use of gamification is 15.16 and 16.16. Hence, it can be said that the gamification using efficiency of female students is slightly higher than that of male students. The standard deviation of male students is 8.24 and female students is 7.62. The z-value of 0.63 is found insignificant at 5% level of significance.

Therefore, it may be concluded that no significant difference exists between the male and female students regarding the efficiency of use of gamification tools at the secondary level in Golaghat district, Assam.

Objective 4: To know the challenges of implementing gamification.

- Technological tools and techniques always require proper training before using or implementing them in the

field. Teachers with techno-based competency are utmost importance to apply the different techniques of gamification to teach specific subject matter to the children, like language, science, mathematics, etc. But in practice, in a district like Golaghat there is a lack of trained teachers for applying the different techniques of gamification till date, though they are very interested in this regard.

- A smooth internet connection is required for the implementation and use of various kinds of gamification applications. In interior places, poor internet facilities create problems in the implementation and use of gamification.
- Gamification must be designed according to the content required to evaluate the student's achievement,

but if it is not designed properly, it will not be able to evaluate students.

- Designing gamification is time-consuming.
- Gamification requires devices such as desktop or laptop computers, smartphones, tablets, etc. All these gadgets necessitate significant financial investment.
- There is some negligence of teachers in implementing gamification, which happens due to a phobia of implementing techno-based techniques and tools correlating to course content.

Findings of the Study

From the above study, it is found that gamification develops the sense of competition and achievement among students, and helps in developing the ability of critical thinking, skills of problem-solving and teamwork. It can help in fostering creativity, and facilitate personalized learning. It is also found from the study that there exists no significant difference between the male and female teachers regarding the

efficiency of implementation of gamification at the secondary level in Golaghat district, Assam. There is also not found any significant difference between the male and female students regarding the efficiency of use of gamification tools at the secondary level in Golaghat district, Assam.

It is found from the study that though both the teachers and students are eager to implement and use the different gamification tools for their teaching-learning process there are still some challenges prevailing in our society.

Conclusion

It is the expectation of every parent that their child will walk in the same pace with the technological development of the present century. The children are also techno-savvy, so if they are engaged in their own devices for study, enjoying the course contents like games, fun and ways of motivation, it will show great benefits for all.

The impact of gamification on the teaching-learning process at the secondary level is very significant, as it enhances student engagement, motivation, and academic

performance. By integrating game-like points, rewards, badges, and leaderboards, teachers can create an interesting and cooperative learning environment that maintains students' interest and encourages active involvement. This method instills a sense of healthy competition, motivating students not only complete tasks but also to explore the content more deeply. Furthermore, gamification nurtures problem-solving, teamwork and critical thinking skills among the students of secondary-level, helping them develop competencies essential for both academic success and personal growth. It also improves knowledge retention and understanding by simplifying complex concepts and presenting them in an enjoyable and accessible way. Gamification can offer instant feedback, enabling students to see their progress and recognize areas that need improvement. By making the learning process more energetic and interesting, gamification enhances traditional teaching methods while preparing students to face real-world challenges with creativity, resilience, and collaboration.

While gamification can make learning more engaging, it also has some downsides at the

secondary level. Focusing too much on rewards and competition may cause students to think more about earning points or badges than actually understanding the content. This can lead to a superficial understanding of content, where students focus on completing tasks quickly rather than grasping concepts deeply. Additionally, students who struggle to earn rewards may feel frustrated or lose interest, which can hurt their confidence and motivation. Moreover, Creating and managing an effective gamified learning environment requires significant time and resources, which can be challenging for teachers. In some cases, Gamification may not suit all learning styles; some students may feel left out or engaged. Moreover, spending too much time on technology in a gamified setting can cause screen fatigue and reduce students' attention spans, negatively impacting overall learning outcomes.

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